**2.2 – Introduction to Naming**

**Covalent Compounds**

* These compounds typically consist of two non-metals.
* When naming covalent compounds, there are just a couple of simple rules to remember.
  + We will use prefixes to indicate how many atoms of each element are shown in the formula.
  + The ending of the last (or most negative) element will be changed to read “–ide”.
* Prefixes used in naming will be as follows:

|  |  |
| --- | --- |
| **Number of Atoms** | **Prefix Used** |
| 1 | Mono- |
| 2 | Di- |
| 3 | Tri- |
| 4 | Tetra- |
| 5 | Penta- |
| 6 | Hexa- |

**Ionic Compounds**

* These compounds typically consist of a metal and a non-metal.
* Naming these compounds is much simpler. The cation metal appears first in the name, and its name remains the same. The anion non-metal appears second, and its ending is changed to read “–ide”.

**Checklist for naming compounds when given a formula**

1. Determine whether the compound is ionic or covalent.
   1. **Ionic** – metal + non-metal
   2. **Covalent** – non-metal + non-metal
2. Identify the elements in the compound.
   1. Write down the element names.
3. Follow the rules for naming either an ionic or covalent compound:
   1. **Ionic** – change the anion ending to “ide”
   2. **Covalent** – follow the prefix rule, and change the more negative element’s ending to “ide”.
4. Write the complete chemical name.

**Checklist for writing chemical formulas when given a name (opposite of previous instructions)**

1. Determine whether it is an ionic or covalent compound.
   1. **Ionic** – metal + non-metal
   2. **Covalent** – non-metal + non-metal
2. Identify the elements in the compound
   1. Write down the chemical symbol for each element.
3. Analyze the name to determine number ratios:
   1. **Ionic** – check the charges. Overall charge of formula should equal zero – you can use the crossover method if you like.
   2. **Covalent** – check the prefixes. They should tell you how many atoms are in the molecule.
4. Write the correct chemical formula.

**Practice Time!**

Name the following compounds. Write the chemical formulas for the following:

1. CaO 1. Sodium Chloride

***Calcium oxide NaCl***

1. SiF6 2. Carbon tetrahydride

***Silicon hexafluoride CH4***

1. PCl5 3. Diphosphorus pentoxide

***Phosphorus pentachloride P2O5***

1. LiSO4 4. Cesium Iodide

***Lithium sulfate CsI***

1. C2N2 5. Barium chloride

***Dicarbon dinitride BaCl2***